UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/043,532	01/11/2002	Matthew P.J. Baker	GB 010022	6232

			EXAMINER
24737	7590	07/27/2006	DEAN, RAYMOND S

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ART UNIT	PAPER NUMBER
2618	

DATE MAILED: 07/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _11 January 2002_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1 - 15, 19 - 20_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1 - 15, 19 - 20_ is/are rejected.

7)☒ Claim(s) _19_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _11 January 2002_ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the

fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection.

Since this application is eligible for continued examination under 37 CFR 1.114,

and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the

previous Office action has been withdrawn pursuant to 37 CFR 1.114.

Applicant's submission filed on May 8, 2006 has been entered.

Response to Arguments

2.   Applicant's arguments, see remarks filed May 8, 2006 with respect to the

rejection(s) of claim(s) 1, 6, 10, and 20 under 35 U.S.C. 103(a) have been fully

considered and are persuasive. Therefore, the rejection has been withdrawn.

However, upon further consideration, a new ground(s) of rejection is made in

view of newly found prior art Saifuddin et al. (US 6,603,752) and a further search

of Willenegger (US 2002/0009061).

Willenegger further teaches means for transmitting each set of uplink

control information in a time-multiplexed manner over a single physical channel

by reducing the rate of transmission of power control commands in proportion to

a number greater than or equal to the number of primary stations with which sets

of control information are exchanged (Section 0056, since the power control

commands are time multiplexed there will be a power control command for the

downlink power control of each participating base station, for example consider

the scenario of two base stations, there will be two power control commands

(one power control command for base station 1 and one power control command

for base station 2) that are time multiplexed, each base station would respond to

every other power control command thus enabling the rate of transmission of

said power control commands to be reduced to half the original rate, which is in

proportion to the number of base stations, which is 2).

Saifuddin further teaches reducing the rate of transmission of power

control commands by gating off the physical control channel (Column 7 lines 18 –

28, each PCG comprises a defined number of time slots, different time slots are

used to convey power control commands to the different base stations thus the

power control commands will be gated off for PCGs 0,1, 4, 5, etc, which reduces

the rate of transmission of power control commands).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to modify the system of Willenegger with the gating method

and circuitry of Saifuddin for the purpose of providing optimum battery savings as

taught by Saifuddin.

Claim Objections

3.   Claim 19 is objected to because of the following informalities: Claim 19

currently depends on cancelled Claim 16. Appropriate correction is required.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described
> as set forth in section 102 of this title, if the differences between the subject matter sought to
> be patented and the prior art are such that the subject matter as a whole would have been
> obvious at the time the invention was made to a person having ordinary skill in the art to which
> said subject matter pertains. Patentability shall not be negatived by the manner in which the
> invention was made.

5.   Claims 1 – 3, 6, 12 – 15, 19 – 20 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Willenegger (US 2002/0009061) in view of Saifuddin et

al. (US 6,603,752) Mohebbi et al. (US 6,862,449).

Regarding Claim 1, Willenegger teaches a radio communication system

having physical control channels arranged for the bi-directional transmission of

sets of control information between a secondary station and a plurality of primary

stations (Sections 0037, 0049 lines 1 – 6, CDMA systems have forward and

reverse DPCHs thus there will be bi-directional transmissions of sets of control

information), wherein respective closed-loop power control means are provided

for individually adjusting the power of some or all physical control channels, or

parts thereof, to which a set of control information is mapped (Sections 0040 –

0041 and 0055 – 0056, since there are parallel power control loops and soft

handoff is conducted there is an inherent capability to control the power of a

plurality of physical control channels between a plurality of base stations and the

mobile station), means are provided for transmitting each set of uplink control

information in a time-multiplexed manner over a single physical channel by

reducing the rate of transmission of power control commands in proportion to a

number greater than or equal to the number of primary stations with which sets of

control information are exchanged (Section 0056, since the power control

commands are time multiplexed there will be a power control command for the

downlink power control of each participating base station, for example consider

the scenario of two base stations, there will be two power control commands

(one power control command for base station 1 and one power control command

for base station 2) that are time multiplexed, each base station would respond to

every other power control command thus enabling the rate of transmission of

said power control commands to be reduced to half the original rate, which is in

proportion to the number of base stations, which is 2).

Willenegger does not teach said closed-loop power control means being

utilized to select a subset of primary stations greater than one primary station,

selected form the plurality of primary stations, for the transmission of data over at

least one channel between the selected subset of primary stations and the

secondary station, reducing the rate of transmission of power control commands

by gating off the physical control channel.

Saifuddin teaches a closed-loop power control means being utilized to

select a subset of primary stations greater than one primary station, selected

form the plurality of primary stations, for the transmission of data over at least

one channel between the selected subset of primary stations and the secondary

station (Column 4 lines 25 – 28, typical WCDMA systems conduct soft handoff in

which the mobile selects the candidate base stations based on the SIR, the

measurement of said SIR is a part of closed loop power control thus said

measurement of the SIR is a closed loop power control means, during soft

handoff data will be transmitted over at least one data channel), reducing the rate

of transmission of power control commands by gating off the physical control

channel (Column 7 lines 18 – 28, each PCG comprises a defined number of time

slots, different time slots are used to convey power control commands to the

different base stations thus the power control commands will be gated off for

PCGs 0,1, 4, 5, etc, which reduces the rate of transmission of power control

commands).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to modify the system of Willenegger with the gating method

and circuitry of Saifuddin for the purpose of providing optimum battery savings as

taught by Saifuddin.

Regarding Claim 2, Willenegger in view of Saifuddin teaches all of the

claimed limitations recited in Claim 1. Willenegger further teaches means

provided for encoding each downlink physical control channel, or part thereof, to

which a set of control information is mapped with a respective scrambling code to

enable the associated primary station to be identified (Section 0034 lines 1 – 3,

since this is a CDMA system there are inherent scrambling or PN codes that

distinguish the base stations).

Regarding Claim 3, Willenegger in view of Saifuddin teaches all of the

claimed limitations recited in Claim 1. Willenegger further teaches means

provided for transmitting power control commands relating to each downlink

physical control channel, or part thereof, to which a set of control information is

mapped via a single time-multiplexed uplink physical channel (Section 0056).

Regarding Claim 6, Willenegger teaches a primary station for use in a

radio communication system having physical control channels arranged for the

bi-directional transmission of sets of control information between a secondary

station and a plurality of primary stations (Sections 0037, 0049 lines 1 – 6, CDMA

systems have forward and reverse DPCHs thus there will be bi-directional

transmissions of sets of control information), wherein closed-loop power control

means are provided for adjusting the power of some or all physical control

channels between the plurality of primary stations and the secondary station, or

parts thereof, to which a set of control information is mapped (Sections 0040 –

0041 and 0055 – 0056, since there are parallel power control loops and soft

handoff is conducted there is an inherent capability to control the power of a

plurality of physical control channels between a plurality of base stations and the

mobile station), means are provided for transmitting each set of uplink control

information in a time-multiplexed manner over a single physical channel by

reducing the rate of transmission of power control commands in proportion to a

number greater than or equal to the number of primary stations with which sets of

control information are exchanged (Section 0056, since the power control

commands are time multiplexed there will be a power control command for the

downlink power control of each participating base station, for example consider

the scenario of two base stations, there will be two power control commands

(one power control command for base station 1 and one power control command

for base station 2) that are time multiplexed, each base station would respond to every other power control command thus enabling the rate of transmission of said power control commands to be reduced to half the original rate, which is in proportion to the number of base stations, which is 2).

Willenegger does not teach at least one data channel between a selected subset of primary stations greater than one primary station, selected from the plurality of primary stations, and the secondary station for the transmission of data over the at least one data channel, said closed-loop power control means being utilized to select the subset of primary stations, reducing the rate of transmission of power control commands by gating off the physical control channel.

Saifuddin teaches at least one data channel between a selected subset of primary stations greater than one primary station, selected from the plurality of primary stations, and the secondary station for the transmission of data over the at least one data channel, said closed-loop power control means being utilized to select the subset of primary stations (Column 4 lines 25 – 28, typical WCDMA systems conduct soft handoff in which the mobile selects the candidate base stations based on the SIR, the measurement of said SIR is a part of closed loop power control thus said measurement of the SIR is a closed loop power control means, during soft handoff data will be transmitted over at least one data channel), reducing the rate of transmission of power control commands by gating off the physical control channel (Column 7 lines 18 – 28, each PCG comprises a defined number of time slots, different time slots are used to convey power

control commands to the different base stations thus the power control commands will be gated off for PCGs 0,1, 4, 5, etc, which reduces the rate of transmission of power control commands).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Willenegger with the gating method and circuitry of Saifuddin for the purpose of providing optimum battery savings as taught by Saifuddin.

Regarding Claim 10, Willenegger teaches a secondary station for use in a radio communication system having physical control channels arranged for the bi-directional transmission of sets of control information between the secondary station and a plurality of primary stations (Sections 0037, 0049 lines 1 – 6, CDMA systems have forward and reverse DPCHs thus there will be bi-directional transmissions of sets of control information), wherein closed-loop power control means are provided for adjusting individually the power of some or all physical control channels between the plurality of primary stations and the secondary station, or parts thereof, to which a set of control information is mapped (Sections 0040 – 0041 and 0055 – 0056, since there are parallel power control loops and soft handoff is conducted there is an inherent capability to control the power of a plurality of physical control channels between a plurality of base stations and the mobile station), means are provided for transmitting each set of uplink control information in a time-multiplexed manner over a single physical channel by reducing the rate of transmission of power control commands in proportion to a number greater than or equal to the number of primary stations with which sets of

control information are exchanged (Section 0056, since the power control

commands are time multiplexed there will be a power control command for the

downlink power control of each participating base station, for example consider

the scenario of two base stations, there will be two power control commands

(one power control command for base station 1 and one power control command

for base station 2) that are time multiplexed, each base station would respond to

every other power control command thus enabling the rate of transmission of

said power control commands to be reduced to half the original rate, which is in

proportion to the number of base stations, which is 2).

Willenegger does not teach at least one data channel between a selected

subset of primary stations greater than one primary station, selected from the

plurality of primary stations, and the secondary station for the transmission of

data over the at least one data channel and said closed-loop power control

means being utilized to select the subset of primary stations, reducing the rate of

transmission of power control commands by gating off the physical control

channel.

Saifuddin teaches at least one data channel between a selected subset of

primary stations greater than one primary station, selected from the plurality of

primary stations, and the secondary station for the transmission of data over the

at least one data channel, said closed-loop power control means being utilized to

select the subset of primary stations (Column 4 lines 25 – 28, typical WCDMA

systems conduct soft handoff in which the mobile selects the candidate base

stations based on the SIR, the measurement of said SIR is a part of closed loop

power control thus said measurement of the SIR is a closed loop power control means, during soft handoff data will be transmitted over at least one data channel), reducing the rate of transmission of power control commands by gating off the physical control channel (Column 7 lines 18 – 28, each PCG comprises a defined number of time slots, different time slots are used to convey power control commands to the different base stations thus the power control commands will be gated off for PCGs 0,1, 4, 5, etc, which reduces the rate of transmission of power control commands).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Willenegger with the gating method and circuitry of Saifuddin for the purpose of providing optimum battery savings as taught by Saifuddin.

Regarding Claim 12, Willenegger in view of Saifuddin teaches all of the claimed limitations recited in Claim 10. Willenegger further teaches means provided for transmitting each set of uplink control information over a separate physical channel (Section 0055).

Regarding Claim 13, Willenegger in view of Saifuddin teaches all of the claimed limitations recited in Claim 12. Willenegger further teaches means provided for distinguishing the physical channels by use of different channelization codes (Section 0034 lines 1 – 3, since this is a CDMA system there are spreading codes for distinguishing the channels).

Regarding Claim 14, Willenegger in view of Saifuddin teaches all of the claimed limitations recited in Claim 12. Willenegger further teaches means

provided for distinguishing two of the physical channels by transmitting a first

physical channel, which uses the in-phase component of the carrier, and a

second physical channel, which uses the quadrature-phase component of the

carrier (Section 0034 lines 1 – 3, typical CDMA systems use QPSK modulation,

which comprises in-phase and quadrature components).

Regarding Claim 15, Willenegger in view of Saifuddin teaches all of the

claimed limitations recited in Claim 14. Willenegger further teaches means

provided for interrupting an uplink physical control channel when uplink data

transmission is required (Section 0034 lines 1 – 3, a typical CDMA system

comprises control channels and data channels, transmission of data occurs a

plurality of different times in CDMA systems thus there will be interruption of the

uplink physical control channels when uplink data transmission is required).

Regarding Claim 19, Willenegger in view of Saifuddin teaches all of the

claimed limitations recited in Claim 10. Willenegger further teaches means

provided for achieving the time multiplexing by including separate power control

relating to each primary station with which sets of control information are

exchanged in a single physical control channel (Section 0056).

Regarding Claim 20, Willenegger teaches a method of operating a radio

communication system having physical control channels arranged for the bi-

directional transmission of sets of control information between a secondary

station and a plurality of primary stations (Sections 0037, 0049 lines 1 – 6, CDMA

systems have forward and reverse DPCHs thus there will be bi-directional

transmissions of sets of control information), the method comprising operating

respective closed-loop power control means for individually adjusting the power of some or all physical control channels, or parts thereof, to which a set of control information is mapped (Sections 0040 – 0041 and 0055 – 0056, since there are parallel power control loops and soft handoff is conducted there is an inherent capability to control the power of a plurality of physical control channels between a plurality of base stations and the mobile station), transmitting each set of uplink control information in a time-multiplexed manner over a single physical channel by reducing the rate of transmission of power control commands in proportion to a number greater than or equal to the number of primary stations with which sets of control information are exchanged (Section 0056, since the power control commands are time multiplexed there will be a power control command for the downlink power control of each participating base station, for example consider the scenario of two base stations, there will be two power control commands (one power control command for base station 1 and one power control command for base station 2) that are time multiplexed, each base station would respond to every other power control command thus enabling the rate of transmission of said power control commands to be reduced to half the original rate, which is in proportion to the number of base stations, which is 2).

Willenegger does not teach at least one data channel between a selected subset of primary stations greater than one primary station, selected from the plurality of primary stations, and the secondary station for the transmission of data over the at least one data channel and control information mapped to select

the subset of primary stations, reducing the rate of transmission of power control

commands by gating off the physical control channel.

Saifuddin teaches at least one data channel between a selected subset of

primary stations greater than one primary station, selected from the plurality of

primary stations, and the secondary station for the transmission of data over the

at least one data channel, said closed-loop power control means being utilized to

select the subset of primary stations (Column 4 lines 25 – 28, typical WCDMA

systems conduct soft handoff in which the mobile selects the candidate base

stations based on the SIR, the measurement of said SIR is a part of closed loop

power control thus said measurement of the SIR is a closed loop power control

.means, during soft handoff data will be transmitted over at least one data

channel), reducing the rate of transmission of power control commands by gating

off the physical control channel (Column 7 lines 18 – 28, each PCG comprises a

defined number of time slots, different time slots are used to convey power

control commands to the different base stations thus the power control

commands will be gated off for PCGs 0,1, 4, 5, etc, which reduces the rate of

transmission of power control commands).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to modify the system of Willenegger with the gating method

and circuitry of Saifuddin for the purpose of providing optimum battery savings as

taught by Saifuddin.

6.   Claims 4 – 5, 7, 11 are rejected under 35 U.S.C. 103(a) as being
unpatentable over Willenegger (US 2002/0009061) in view of Saifuddin et al. (US
6,603,752), as applied to Claims 1, 6, 10 above, and further in view of Mohebbi
et al. (US 6,862,449).

Regarding Claim 4, Willenegger in view of Saifuddin teaches all of the
claimed limitations recited in Claim 1. Willenegger in view of Saifuddin does not
teach means responsive to requests from the secondary station are provided for
selecting the primary station connected to the or each data channel.

Mohebbi teaches means responsive to requests from the secondary
station are provided for selecting the primary station connected to the or each
data channel (Column 17 lines 25 – 28).

It would have been obvious to one of ordinary skill in the art at the time the
invention was made to modify the system of Willenegger in view of Saifuddin with
the candidate selection circuitry of Mohebbi for the purpose of improving signal
transmission between the mobile station and the network when said mobile
station is located in regions of cell overlap near the boundaries of individual cells
while also reducing the interference associated with the soft-handoff operation as
taught by Mohebbi.

Regarding Claim 5, Willenegger in view of Saifuddin teaches all of the
claimed limitations recited in Claim 1. Willenegger in view of Saifuddin does not
teach means provided for establishing a plurality of communication links between
a primary station and the secondary station, for determining which of the primary

stations comprise selected primary stations, and for determining which of the

communication links are selected.

Mohebbi teaches means provided for establishing a plurality of

communication links between a primary station and the secondary station (Figure

5), for determining which of the primary stations comprise selected primary

stations, and for determining which of the communication links are selected

(Columns: 4 lines 41 – 67, 5 lines 1 – 2, 6 lines 34 – 40, 16 lines 62 – 67, 17 lines

1 – 7).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to modify the system of Willenegger in view of Saifuddin with

the candidate selection circuitry of Mohebbi for the purpose of improving signal

transmission between the mobile station and the network when said mobile

station is located in regions of cell overlap near the boundaries of individual cells

while also reducing the interference associated with the soft-handoff operation as

taught by Mohebbi.

Regarding Claim 7, Willenegger in view of Saifuddin teaches all of the

claimed limitations recited in Claim 6. Willenegger in view of Saifuddin does not

teach means provided for acquiring or releasing a data channel in response to

changing radio link conditions, thereby becoming or ceasing to be a selected

primary station.

Mohebbi further teaches means provided for acquiring or releasing a data

channel in response to changing radio link conditions, thereby becoming or

ceasing to be a selected primary station (Columns: 16 lines 62 – 67, 17 lines 1 – 7).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Willenegger in view of Saifuddin with the candidate selection circuitry of Mohebbi for the purpose of improving signal transmission between the mobile station and the network when said mobile station is located in regions of cell overlap near the boundaries of individual cells while also reducing the interference associated with the soft-handoff operation as taught by Mohebbi.

Regarding Claim 11, Willenegger in view of Saifuddin teaches all of the claimed limitations recited in Claim 10. Willenegger in view of Saifuddin does not teach means provided for determining which of the primary stations comprise the selected primary station or stations in response to changing radio link conditions.

Mohebbi further teaches means provided for determining which of the primary stations comprise the selected primary station or stations in response to changing radio link conditions (Columns: 16 lines 62 – 67, 17 lines 1 – 7).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Willenegger with the candidate selection circuitry of Mohebbi for the purpose of improving signal transmission between the mobile station and the network when said mobile station is located in regions of cell overlap near the boundaries of individual cells while also reducing the interference associated with the soft-handoff operation as taught by Mohebbi.

7.   Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Willenegger (US 2002/0009061) in view of Saifuddin et al. (US 6,603,752) as applied to Claim 6 above, and further in view of Baum et al. (US 6,385,462)

Regarding Claim 8, Willenegger in view of Saifuddin teaches all of the claimed limitations recited in Claim 6. Willenegger in view of Saifuddin does not teach means provided for determining operational parameters of the data channel depending on the power level of a physical control channel, or part thereof, to which a set of control information is mapped.

Baum teaches means provided for determining operational parameters of the data channel depending on the power level of a physical control channel, or part thereof, to which a set of control information is mapped (Column 4 lines 22 – 28, the MCR is an operational parameter).

It would have been obvious to one ordinary skill in the art at the time the invention was made to use the MCR taught above in Baum in the CDMA system of Willenegger in view of Saifuddin for the purpose of implementing an adaptive power allocation, which can achieve high system capacity, and system coverage as taught by Baum.

Regarding Claim 9, Willenegger in view of Saifuddin and in further view of Baum teaches all of the claimed limitations recited in Claim 8. Baum further teaches modulation and/or coding schemes (Column 4 lines 22 – 28).

Conclusion

8.   Any inquiry concerning this communication or earlier communications from

the examiner should be directed to Raymond S. Dean whose telephone number

is 571-272-7877. The examiner can normally be reached on Monday-Friday

6:00-2:30.

If attempts to reach the examiner by telephone are unsuccessful, the

examiner's supervisor, Edward F. Urban can be reached on 571-272-7899. The

fax phone number for the organization where this application or proceeding is

assigned is 571-273-8300.

Information regarding the status of an application may be obtained from

the Patent Application Information Retrieval (PAIR) system. Status information

for published applications may be obtained from either Private PAIR or Public

PAIR. Status information for unpublished applications is available through

Private PAIR only. For more information about the PAIR system, see http://pair-

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free). If you would like assistance from a USPTO Customer Service

Representative or access to the automated information system, call 800-786-

9199 (IN USA OR CANADA) or 571-272-1000.

Raymond S. Dean
July 10, 2006
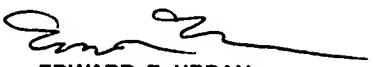
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